

Mr. Mark Salee  
City of Elkhart Wastewater Treatment Utility  
1201 S. Nappanee Street  
Elkhart, Indiana 46516

Dear Mr. Salee:

Re: Revised Exempt Construction and Operation Status  
Covering the Entire Source,  
039-13696-00441

The application from City of Elkhart Wastewater Treatment Utility, received on December 28, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following wastewater treatment facility located at 1201 S. Nappanee Street, Elkhart, Indiana, 46516 is classified as exempt from air pollution permit requirements:

- (a) Two (2) boiler-sludge units, each fueled by natural gas or process gas, identified as 208603 and 208604 each having a maximum heat capacity of 3.35 MMBtu/hr.
- (b) One (1) waste gas flare, fueled by process gas, identified as 001, having a maximum capacity of 6.49 MMBtu/hr.
- (c) One (1) Dunham-Bush Iron Fireman boiler, fueled by natural gas or process gas, identified as 253030, having a maximum heat capacity of 3.35 MMBtu/hr.
- (d) One (1) Bradford White Water heater, fueled by natural gas, identified as 244511, having a maximum heat capacity of 0.2 MMBtu/hr.
- (e) One (1) Burham boiler, fueled by natural gas, identified as 254477, having a maximum capacity of 0.86 MMBtu/hr.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (2) The particulate matter (PM) from the boilers shall be limited to 0.6 pounds per MMBtu heat input each. Boilers 208603 and 208604 have a combined maximum heat capacity (Q) of 6.7 MMBtu per

hour. Boilers 253030 and 254477 have a combined maximum heat capacity (Q) of 10.9 MMBtu per hour.

This limitation is determined by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr).

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

ERG/AR

cc: File - Elkhart County  
Elkhart County Health Department  
Air Compliance - Paul Karkiewicz  
Northern Regional Office  
Permit Tracking - Cynthia Bymaster  
Technical Support and Modeling - Michele Boner  
Compliance Branch - Karen Nowak

## **Indiana Department of Environmental Management Office of Air Quality**

### **Technical Support Document (TSD) for an Exempted Source**

#### **Source Background and Description**

Source Name: City of Elkhart Wastewater Treatment Utility  
Source Location: 1201 S. Nappanee Street, Elkhart, Indiana 46516  
County: Elkhart  
SIC Code: 4952  
Operation Permit No.: 039-13696-00441  
Permit Reviewer: ERG/AR

The Office of Air Quality (OAQ) has reviewed an application from City of Elkhart Wastewater Treatment Utility relating to the construction and operation of a wastewater treatment facility.

#### **Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) boiler-sludge units, each fueled by natural gas or process gas, identified as 208603 and 208604 each having a maximum heat capacity of 3.35 MMBtu/hr.
- (b) One (1) waste gas flare, fueled by process gas, identified as 001, having a maximum capacity of 6.49 MMBtu/hr.

#### **Unpermitted Emission Units and Pollution Control Equipment**

There are no unpermitted facilities operating at this source during this review process.

#### **New Emission Units and Pollution Control Equipment Receiving Prior Approval**

- (a) One (1) Dunham-Bush Iron Fireman boiler, fueled by natural gas or process gas, identified as 253030, having a maximum heat capacity of 3.35 MMBtu/hr.
- (b) One (1) Bradford White Water heater, fueled by natural gas, identified as 244511, having a maximum heat capacity of 0.2 MMBtu/hr.
- (c) One (1) Burham boiler, fueled by natural gas, identified as 254477, having a maximum capacity of 0.86 MMBtu/hr.

#### **Existing Approvals**

The source has been operating under previous approvals including, but not limited to, the following:

- (a) CP 039-8549-00441, issued on June 13, 1997.

(b) Exemption 039-7605-00441, issued on April 2, 1997.

All conditions from previous approvals were incorporated into this permit.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S1	Boilers 208603 & 208604	24.25	1.33	N/A	N/A
S2	Boiler 253030	27.25	1.0	N/A	N/A
S3	Water Heater 244511	46	0.5	N/A	N/A
S4	Boiler 254477	22	0.67	N/A	N/A
F1	Waste Gas Flare	10.75	1.0	N/A	N/A

### Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 28, 2000, with additional information received on July 31, 2001.

### Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 12).

### Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	0.59
PM-10	0.59
SO <sub>2</sub>	0.05
VOC	0.42
CO	17.00
NO <sub>x</sub>	9.65

HAP's	Potential To Emit (tons/year)
Hexane	0.14
<b>TOTAL HAPS</b>	<b>0.15</b>

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants is less than the levels listed in 326 IAC 2-1.1-3(d)(1), therefore, the source is subject to the provisions of 326 IAC 2-1.1-3.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (e) This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2.

### County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
Ozone	Maintenance
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Elkhart County has been classified as attainment or unclassifiable for PM-10, SO<sub>2</sub>, NO<sub>2</sub>, CO, and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

### Part 70 Permit Determination

#### 326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

### **Federal Rule Applicability**

- (a) This source is not subject to the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60, Subpart Dc), because all of the boilers have heat input capacities less than 10 MMBtu per hour.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 40 CFR Part 63) applicable to this source.

### **State Rule Applicability - Entire Source**

#### **326 IAC 2-6 (Emission Reporting)**

This source is located in Elkhart County and the potential to emit VOC and NOx is less than ten (10) tons per year. Therefore, 326 IAC 2-6 does not apply.

#### **326 IAC 5-1 (Visible Emissions Limitations)**

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))**

The operation of this wastewater treatment facility will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

#### **326 IAC 6-2-4**

The particulate matter (PM) from the boilers shall be limited to 0.6 pounds per MMBtu heat input each. Boilers 208603 and 208604 have a combined maximum heat capacity (Q) of 6.7 MMBtu per hour. Boilers 253030 and 254477 have a combined maximum heat capacity (Q) OF 10.9 MMBtu per hour.

This limitation is determined by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr).

Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.

### **Conclusion**

The construction and operation of this wastewater treatment facility shall be subject to the conditions of the attached Exemption 039-13696-00441.

## Appendix A: Emissions Calculations

### Process Gas Combustion Only

MM BTU/HR <100

### Small Industrial Boiler

**Company Name:** City of Elkhart Wastewater Treatment Utility  
**Address City IN Zip:** 1201 S. Nappanee Street, Elkhart, IN 46516  
**CP:** 039.13696.00441  
**Plt ID:** 039.00441  
**Reviewer:** ERG/ADR  
**Date:** June 15, 2001

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

3.4

48.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	2.4	0.1	2.1

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

### Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1/600Btu/ft<sup>3</sup>

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See next page for HAPs emissions calculations.



**Appendix A: Emissions Calculations  
Process Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

**Company Name: City of Elkhart Wastewater Treatment Utility**

**Address City IN Zip: 1201 S. Nappanee Street, Elkhart, IN 46516**

**CP: 039.13696.00441**

**Plt ID: 039.00441**

**Reviewer: ERG/ADR**

**Date: June 15, 2001**

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	5.136E-05	2.935E-05	1.834E-03	4.402E-02	8.315E-05

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.223E-05	2.690E-05	3.424E-05	9.293E-06	5.136E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations****Process Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler**

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**Reviewer:** ERG/ADR  
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Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

3.4

48.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	2.4	0.1	2.1

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1/600Btu/ft<sup>3</sup>

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See next page for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Process Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

**Company Name: City of Elkhart Wastewater Treatment Utility**

**Address City IN Zip: 1201 S. Nappanee Street, Elkhart, IN 46516**

**CP: 039.13696.00441**

**Plt ID: 039.00441**

**Reviewer: ERG/ADR**

**Date: June 15, 2001**

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	5.136E-05	2.935E-05	0.000E+00	4.402E-02	8.315E-05

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.223E-05	2.690E-05	3.424E-05	9.293E-06	5.136E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler**

**Company Name:** City of Elkhart Wastewater Treatment Utility  
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Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.9

7.5

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.4	0.0	0.3

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1MMCF/1000MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See next page for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

**Company Name: City of Elkhart Wastewater Treatment Utility**

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**CP: 039.13696.00441**

**Plt ID: 039.00441**

**Reviewer: ERG/ADR**

**Date: June 15, 2001**

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	7.883E-06	4.504E-06	2.815E-04	6.757E-03	1.276E-05

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.877E-06	4.129E-06	5.255E-06	1.426E-06	7.883E-06

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emissions Calculations****Process Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler**

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Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

3.3

48.9

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	2.4	0.1	2.1

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1/600Btu/ft<sup>3</sup>

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See next page for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Process Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

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**Reviewer: ERG/ADR**

**Date: June 15, 2001**

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	5.132E-05	2.933E-05	1.833E-03	4.399E-02	8.310E-05

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.222E-05	2.688E-05	3.422E-05	9.287E-06	5.132E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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**Appendix A: Emissions Calculations****Natural Gas Combustion Only****MM BTU/HR <100****Small Industrial Boiler**

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Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.2

1.8

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.1	0.0	0.1

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1/1000Btu/ft<sup>3</sup>

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See next page for HAPs emissions calculations.



**Appendix A: Emissions Calculations  
Natural Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

**Company Name: City of Elkhart Wastewater Treatment Utility**

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**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	1.840E-06	1.051E-06	6.570E-05	1.577E-03	2.978E-06

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	4.380E-07	9.636E-07	1.226E-06	3.329E-07	1.840E-06

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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# **Appendix A: Emissions Calculations**

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## **Process Gas Combustion Only**

### **Waste Gas Flare**

**Company Name:** City of Elkhart Wastewater Treatment Utility  
**Address City IN Zip:** 1201 S. Nappanee Street, Elkhart, IN 46516  
**CP:** 039.13696.00441  
**Pit ID:** 039.00441  
**Reviewer:** ERG/ADR  
**Date:** August 1, 2001

Flare Capacity = 6.49 MMBtu/hr

Emission Factors for Flares	
CO	0.37 lb/MMBtu
NOx	0.068 lb/MMBtu

These emission factors are from AP-42, Chapter 13.5.

<b>CO Emissions =</b>	<b>10.52 tons/yr</b>
<b>Ox Emissions =</b>	<b>1.93 tons/yr</b>

Methodology: (Emission Factor)\*(Flare Capacity)\*(1 ton/2000 lbs)\*(8760 hr/1 yr)

# Appendix A: Emissions Calculations

## Summary of Emissions

Company Name: City of Elkhart Wastewater Treatment Utility  
Address City IN Zip: 1201 S. Nappanee Street, Elkhart, IN 46516  
CP: 039.13696.00441  
Plt ID: 039.00441  
Reviewer: ERG/ADR  
Date: August 1, 2001

Tons/Year						
	PM	PM10	SO2	NOx	VOC	CO
208603	0.19	0.19	0.01	2.45	0.13	2.05
208604	0.19	0.19	0.01	2.45	0.13	2.05
254477	0.03	0.03	0.00	0.38	0.02	0.32
253030	0.19	0.19	0.01	2.44	0.13	2.05
244511	0.00	0.00	0.00	0.01	0.00	0.01
001	0.00	0.00	0.00	1.93	0.00	10.52
<b>Total</b>	<b>0.59</b>	<b>0.59</b>	<b>0.05</b>	<b>9.65</b>	<b>0.42</b>	<b>17.00</b>

Tons/Year					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
208603	5.14E-05	2.93E-05	1.83E-03	4.40E-02	8.31E-05
208604	5.14E-05	2.93E-05	0.00E+00	4.40E-02	8.31E-05
254477	7.88E-06	4.50E-06	2.82E-04	6.76E-03	1.28E-05
253030	5.13E-05	2.93E-05	1.83E-03	4.40E-02	8.31E-05
244511	1.84E-06	1.05E-06	6.57E-05	1.58E-03	2.98E-06
001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>Total</b>	<b>1.64E-04</b>	<b>9.36E-05</b>	<b>4.01E-03</b>	<b>1.40E-01</b>	<b>2.65E-04</b>

Tons/Year					
	Lead	Cadmium	Chromium	Manganese	Nickel
208603	1.22E-05	2.69E-05	3.42E-05	9.29E-06	5.14E-05
208604	1.22E-05	2.69E-05	3.42E-05	9.29E-06	5.14E-05
254477	1.88E-06	4.13E-06	5.26E-06	1.43E-06	7.88E-06
253030	1.22E-05	2.69E-05	3.42E-05	9.29E-06	5.13E-05
244511	4.380E-07	9.636E-07	1.226E-06	3.329E-07	1.840E-06
001	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
<b>Total</b>	<b>3.90E-05</b>	<b>8.58E-05</b>	<b>1.09E-04</b>	<b>2.96E-05</b>	<b>1.64E-04</b>

Total HAPs = 0.15 tons/year